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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/706,651

11/12/2003

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12/23/2004

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EXAMINER

STEIN, JAMES D

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/706,651	<b>Applicant(s)</b> ARONSON ET AL.	
	<b>Examiner</b> James D. Stein	<b>Art Unit</b> 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-16, and 18-24 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication 20030091304 A1 to Tonai et al.

With regard to claim 1, Tonai discloses a related optical coupler for reducing back reflection into the optical fiber comprising a housing sleeve 13 having an opening (near A2) for receiving an optical fiber (Fig. 3B). Furthermore, Fig. 3B shows an optical component 25 having a first facet 30 parallel to a second facet. Tonai teaches ferrule 52a of optical fiber 52b to contact said optical component 30, "One of the pair of faces is provided so as to abut against an end of the optical fiber [0008]." Additionally, said second facet is shown displaced from the terminal end of said optical fiber 52b, and Tonai teaches said optical component to function so as to "[restrain] reflected light occurring at the optical fiber end face from going back to the optical fiber [abstract]," as claimed by applicant. Fig. 9 illustrates this property.

With regard to claim 2, in addition to the rejection of claim 1 discussed above, Tonai teaches, "the optical part 25 may be attached to the sleeve body in a position displaced from an appropriate position on a plane perpendicular to the direction in which the optical fiber extends." This feature is illustrated by Fig. 3B, which shows axis of optical fiber 52b to be normal to said first facet 30 of said optical component 25.

With regard to claim 3, in addition to the rejection of claim 1 discussed above, Tonai discloses optical part 25 comprising glass [0060].

With regard to claim 4, in addition to the rejection of claim 1 discussed above, Tonai teaches “the other end portion of the sleeve 13 is provided with a photoelectric transducer attaching portion 23 for attaching the photoelectric transducer 15 [0059].” Attaching portion 23 is shown to be a port for interfacing said photoelectric transducer. Said photoelectric transducer 15 is shown by Fig. 3B to comprise a package including a plurality of load terminals 15b, thus comprising an “optoelectronic package”, as claimed by applicant.

With regard to claim 5, in addition to the rejection of claim 4 discussed above, Tonai further specifies said photoelectric transducer 15 to further comprise a “receiver optical subassembly,” as claimed by applicant: “The light-receiving subassembly 15 comprises a mounting member 15a, a plurality of lead terminals 15b, a semiconductor light-receiving device 15c, a lens holding member 15d, and a lens 15e. An example of the mounting member 15a is a stem [0055].” This teaching fully anticipates that of applicant regarding a “receiver optical sub-assembly.”

With regard to claim 6, in addition to the rejection of claim 1 discussed above, Fig. 3B shows housing comprising two portions: an optical fiber ferrule 52a, and a receiving module sleeve 13, or “base” as claimed by applicant.

With regard to claim 7, in addition to the rejection of claim 6 discussed above, Fig. 3B shows a protrusion 13a which cooperates with ferrule 52a so as to position ferrule opening 52a (optical fiber) against optical component 25.

With regard to claim 8, in addition to the rejection of claim 1 discussed above, a mounting portion 12b of said sleeve base 13 is partially connected to optical component 25 so as to position said optical component 25 in a center portion 13b of a port 13d within said housing 13 (Fig. 3B).

With regard to claim 9, all limitations of this claim have been disclosed and previously discussed above, except for "the first optical component having a diameter that is greater than a diameter of the core of the optical fiber." In addition to Fig. 3B, this relationship is shown clearly in Figs. 8A and 8B.

With regard to claim 10 and 13, in addition to the rejection of claim 9 discussed above, Fig. 2B shows a port 8d adapted to receive a second optical device 9, which is taught to be a light-emitting sub-assembly. A light-emitting sub-assembly is analogous to a "transmitter sub-assembly," as claimed by applicant.

With regard to claims 11 and 12, in addition to the rejection of claim 10 discussed above, Fig. 3B shows an air gap region disposed between the first optical component 25 and the light-receiving sub-assembly 15. Said first optical component is taught to be glass [0060], which has a higher index of refraction than that of air.

With regard to claim 14, in addition to the rejection of claim 13, previously discussed above, Tonai teaches an alternate embodiment of the invention wherein said light-emitting sub-assembly is further comprised of a semiconductor laser element 9c, and a lens 9e. "By way of the lens 9e, the semiconductor light-emitting device 9c is optically coupled to an optical fiber inserted into the sleeve 8 [0049]." Such functionality requires said lens 9e "to be in optical communication with the laser transmitter," as

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claimed by applicant. Furthermore, lens 9e functions such that "light from a light-emitting device 9a is incident on an end of the optical fiber [0048]," which is analogous to focusing "electromagnetic radiation upon the terminal end of the fiber," as claimed by applicant.

With regard to claim 15, in addition to the rejection of claim 9 discussed above, Tonai teaches, "the optical part 25 may be attached to the sleeve body in a position displaced from an appropriate position on a plane perpendicular to the direction in which the optical fiber extends." This feature is illustrated by Fig. 3B, which shows axis of optical fiber 52b to be normal to said first facet 30 of said optical component 25.

With regard to claim 16, in addition to the rejection of claim 9 discussed above, "the optical part 25 has a cylindrical form with a diameter 36 of 1.7 mm and a thickness of 0.5 mm, for example [0060]." This teaching anticipates the range of thickness for optical component 25 of "less than about 2mm," as claimed applicant.

With regard to claim 18, in addition to the rejection of claim 9 discussed above, a mounting portion 13b of said sleeve base 13 is partially connected to optical component 25 so as to position said optical component 25 in a center portion 13b of a port 13d within said housing 13 (Fig. 3B).

With regard to claim 19, in addition to the rejection of claim 18 discussed above, Fig. 3B shows a lip portion 13c disposed about and extending from a periphery of said housing 13.

With regard to claim 20, all limitations of this claim have been disclosed and previously discussed above except for said housing having a port adapted to receive an

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optoelectronic package. Fig. 3B shows a port region 13c of said housing 13 adapted to receive said light-receiving sub-assembly package 15.

With regard to claim 21, in addition to the rejection of claim 20 discussed above, Fig. 3B shows housing comprising two portions: an optical fiber ferrule 52a, and a receiving module sleeve 13, or "base" as claimed by applicant. Furthermore, "the ferrule 52a of the optical connector 52 is inserted into the sleeve 13 while being guided by the inner side face 13d, and abuts against one face 30 of the optical part 25 [0058]." Therefore, said ferrule 52a is "capable of connecting to the base," as claimed by applicant.

With regard to claim 22, in addition to the rejection of claim 20 discussed above, Fig. 3B shows an air gap region disposed between the first optical component 25 and the optoelectronic package 15. Said first optical component is taught to be glass [0060], which has a higher index of refraction than that of air.

With regard to claim 23, in addition to the rejection of claim 20 discussed above, Tonai teaches an alternate embodiment in Fig. 2A wherein said optoelectronic package is a light-emitting subassembly 9 [0051]. A light-emitting subassembly 9 anticipates applicants claim of a transmitting optical sub-assembly TOSA.

With regard to claim 24, in addition to the rejection of claim 20 discussed above, a mounting portion 13b of said sleeve base 13 is partially connected to optical component 25 so as to position said optical component 25 in a center portion 13b of a port 13d within said housing 13 (Fig. 3B).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tonai et al. Tonai discloses the claimed invention except for an optical component thickness of approximately 1mm. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose a thickness of 1mm in order to reduce back reflection into the optical fiber, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6,789,955 to Anderson, and U.S. Patent No. 6,652,158 to Bartur et al, which disclose related optical devices with back-reflection reduction.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation



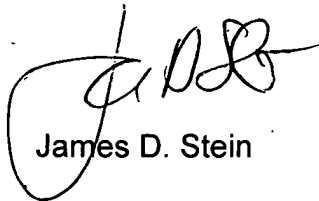
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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

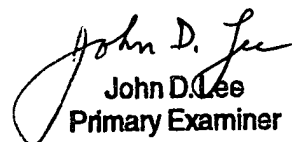
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James D. Stein



John D. Lee  
Primary Examiner